

## ABSTRACT

An improved method of subtracting laser amplitude fluctuations from a desired signal in a multi-line laser system and a detection system having improved noise cancellation are provided. This invention reduces the noise contribution from laser amplitude fluctuations by matching the spectral dependence of the light seen at a monitor of the laser output to the spectral dependence of a desired signal. This spectral matching results in an improved correction of the laser power in a desired signal.